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NOTES ON THE VERTEBRATE ANIMALS OF LEICESTERSHIRE.

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Up to the present time, so far as I am aware, no complete account of the vertebrate animals of this county has been attempted, although scattered notes have appeared in various Natural History journals, and a few lists—more or less imperfect—have been from time to time published. Thus in 1840 Macgillivray, in his 'British Birds,' printed a "Catalogue of the Land Birds of the County of Leicester, by Mr. Jas. Harley." In 1842 Potter published, in his 'History of the Antiquities of Charnwood Forest,' an "Appendix on the Ornithology of Charnwood Forest, by Churchill Babington, Esq.," in which some few mistakes occurred, but which was nevertheless noteworthy as chronicling for the third time in Great Britain the occurrence of *Cursorius isabellinus.* It is probable that this list was written, if not published, previously to that of Harley. Nothing further, I believe, was published for many years, until my friend Mr. Thomas Macaulay, M.R.C.S.L., contributed to 'The Midland Naturalist' for 1881-2 "A List of the Birds of Leicestershire," to which I added a few notes. This list was, all things considered, the most complete then published, although deficient perhaps in not noting the nesting-habits of the rarer species, and in introducing certain rare British birds on the mere *ipse dixit* of observers little competent to discriminate closely-allied species. Since

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then a list, by Mr. F. T. Mott, of "The Mammals of Leicestershire" appeared in 'The Midland Naturalist' for November, 1884, a contribution so amusingly vague, and dealing to such an extent with probabilities and generalities, that, for practical or scientific purposes, it may be passed over without further remark.

Having had the opportunity since my appointment to the curatorship of the Leicester Museum of examining the whole of the MSS. (1840-55) of the late James Harley, and being now in possession of many additional notes acquired during my five years' residence in this county, it has been suggested to me that, considering the imperfect nature of the existing lists, I might undertake the revision and editing of those MS. notes, together with my own more recent observations. In essaying this I have been of course greatly aided by Harley's MSS., and by the generosity of Mr. T. Macaulay, of Kibworth, already referred to, who has kindly handed me his MSS. extending over twenty-five years' observations. Our mutual friends, the Rev. A. Matthews, M.A., of Gumley, and Mr. H. S. Davenport, of Skeffington, have also given me copious notes. To Messrs. W. Ingram, of Belvoir Castle, R. Widdowson, of Melton Mowbray, Theodore Walker, of Leicester, several members of the Ellis family, and to "Section E" of the Leicester Literary and Philosophical Society, my grateful thanks are due for many valuable and interesting notes, especially on the avifauna of the district.

The order in which the Vertebrata are noted in the following pages is that which has been followed in the arrangement of the collections in the Leicester Museum, and is generally founded on the lines laid down by Professor Flower, Dr. A. Günther, and Dr. P. L. Sclater. The birds are, however, arranged as in the recently published "List of British Birds," compiled by a committee of the British Ornithologists' Union.

In each class of the Vertebrata the most highly specialized form will be placed first, in accordance with general practice; and I intend rigidly to exclude from this list all birds merely "seen" by unskilled observers unable properly to discriminate species. In conclusion, I would ask naturalists to favour me, during the publication of these notes, with any information on the occurrence of more species or varieties which they may consider of interest, together with notes upon little-known habits of the commoner forms.

Class MAMMALIA.—Order CARNIVORA.

Family FELIDÆ.

Felis catus, Linn. Wild Cat.—Extinct within historic times. No authentic records are extant relative to the occurrence in this county of the Wild Cat, which without doubt disappeared from the ancient forests and fastnesses about the same time as the Wolf and Wild Boar. Potter, Babington, and Harley, writing from forty to fifty years ago, are all silent on the subject; and the Rev. A. Matthews, who has been resident twenty-five years in the county, writes word that he has never heard of any occurrence of the Wild Cat in Leicestershire. Large specimens of the Domestic Cat, which have taken to a wild life, have been often shot as game-destroyers in the various woods of the county, and have been forwarded to the Museum as the true *Felis catus*. But for this fact, and in order to correct a misleading reference to the Wild Cat in the pages of the 'Midland Naturalist' for November, 1884, I should not perhaps have referred to the species.

Family CANIDÆ.

Canis lupus, Linn. Wolf. — Extinct within historic times. In Potter's 'History and Antiquities of Charnwood Forest' (1842) he writes—"Charnwood formed part of the ancient Celtic Forest of Arden, which extended from the Avon to the Trent, and the Leicestershire portion was bounded on the east by a line running through High Cross to Barton, in Nottinghamshire. . . . . Previous to the time of Edgar, the district was greatly infested with wolves." Selden, in his notes to Drayton's 'Polyolbion' (ix. 76), refers to the Manor of Piddlesey, in Leicestershire, which was held by one Henry of Angage *per serjeantiam capiendi lupos*, and quotes as his authority 'Hist. Leicesters. 27 Hen. III. in Archiv. Turr. Lond.'*

Canis vulpes, Linn. Common Fox. — In such a fox-hunting county as Leicestershire it is needless to say that the Fox is generally distributed and common; resident and breeding. Mr. H. S. Davenport writes on February 4th, 1855—"We occasionally draw coverts blank, and find foxes up great trees." Mrs. Shackelford, of Husband's Bosworth, Rugby, writes as follows:—"In September, 1881, a friend and I were shooting over a large field of turnips in the parish of Saddington, accompanied by two beaters, a marker on horseback, and a spaniel dog. On our first beat we put up three foxes; my friend then said, 'It will be of little use walking over these turnips any longer, for we shall find no birds, there being so many foxes.' I, however, persuaded him to try another beat; we did so, and found a good covey of partridges, at which we had four barrels, my friend bringing down a brace, and I one bird; my friend's second bird dropping from eighty to a hundred yards in front of us, when to our great amazement the last fox we had started deliberately turned round, met us, fetched the wounded bird, and ran off with it over a brook on to the brow of a hill, where we watched it enjoying its repast, notwithstanding all our shouting and the mounted marksman galloping after it as far as the fence by the brook." The 'Illustrated Sporting and Dramatic News' of November 12th, 1881, gave a full-page illustration showing one beater only, two *pointers*, two guns, a mounted marker, and a fox carrying off a partridge in turnips; but no details were published, except that it was an actual occurrence, and that the bird was a hen pheasant! Thus do stories become altered as they are repeated. A telegram from Atherstone, published in the 'Leicester Daily Post' for January 10th, 1885, narrates a singular hunting incident. While the Atherstone hounds were out they started a fox, and pursued him hotly for some time. Reynard made for Atherstone, and after passing some distance down the main street, darted into the "George and Dragon" public-house, and took refuge upstairs. On the huntsmen coming up he was captured, and the head and brush were presented to the innkeeper. Poor fellow! he deserved a better fate. The following incident, related by my friend Mr. Macaulay, occurred on the farm of Mr. J. Perkins at Laughton, who vouches for the facts:—A labourer at work in a ploughed field saw a fox come through the hedge with a rabbit in his mouth; proceeding some distance into the field he laid the rabbit down, and, scratching a hole, placed the rabbit therein, covered it over, and then took his departure. So soon as the fox was gone the man went to the place and took up the rabbit. About an hour afterwards he saw two foxes come into the field and go straight to the spot where he had seen the rabbit buried. One of them began to search for the rabbit, but not finding it, he cast round in every direction, being joined in this operation by the other. After a few minutes had been thus spent in fruitless search, the two foxes fell upon each other, and a fierce battle ensued until the spectator approached the combatants and separated them. Probably the first fox had invited his friend to dine, and the latter, thinking himself the victim of a hoax, endeavoured to be revenged on his friend by thrashing him.

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* Harting, 'Extinct British Animals,' p. 142.

Family MUSTELIDÆ.

Martes sylvatica, Nilsson. Pine Marten. — Possibly extinct. Harley says of this species (which he calls "*Mustela foina*")—"Annually becoming rare. Occurred a few years since in the woods of Gopsall. The writer had an opportunity afforded some years since of examining a female and young of this species of *Mustela* which had been captured on Earl Howe's estate, situate on the western side of the county. The occurrence of the Marten in the district around Leicester must therefore be considered rare and unusual. It affects decayed and hollow trees, in which it brings forth its young, and preys much on young birds and small Mammalia." I can find no recent notices of its capture in Leicestershire; there is, however, an old specimen in the Leicester Museum, supposed to be from Wellsborough; and another specimen I had an opportunity of examining at Bradgate House is reported to have been killed at Bradgate many years since. Mr. R. Widdowson, of Melton Mowbray, writes:—"When I first came to reside in Melton I went over to Leicester several times, and used to call on a Mr. Pickard, a hairdresser, who lived in the little lane leading out of the market-place, just above the 'White Swan' Inn. He was a taxidermist also, and I well remember seeing some Martens which he had just stuffed, an adult female and two young ones, which, he told me, were killed a few miles away, I believe at Bradgate. He had the adult a long time, and used to exhibit it in his window; and was very fond of talking about it, declaring that it was brought to him alive. I also remember hearing that one was killed at Stapleford, but I did not see it, as it was years before I was employed by Lord Harborough."

Mustela putorius, Linn. Common Polecat. — Generally distributed, but rare. Harley says—"Commonly diffused over the county. Met with most frequently in the more densely-wooded parts of it. Occurs not seldom in the vicinage of such woods as those of Oakley, Piper, Grace Dieu, and Gopsall." Although I have heard of a few, I have not yet seen a Leicestershire specimen in the flesh; and my friend W. Ingram, of Belvoir, writes on

February 7th, 1885—"I cannot hear that a Polecat has been seen or destroyed of late years in our woods." Mr. R. Widdowson, of Melton Mowbray, writes on February 6th, 1885—"Not heard of any here for many years."

Mustela erminea, Linn. Common Stoat.—Generally dispersed and common, breeding close to the town of Leicester. Harley says that he "has seen it chase the Squirrel." My friend Macaulay described to me a most exciting chase which he witnessed, and which ended in a singular manner. I give it in his own words:—"On February 16th, 1884, I was driving from Stoughton to Tur Langton, in company with Mr. Miles J. Walker, when our attention was attracted by the scream of a rabbit, a sound which—like the cry of a hare—is never heard except the animal is in fear. Looking into the adjoining field we saw a rabbit being coursed by a stoat. The rabbit was screaming with terror all the while it ran, and the stoat was rapidly gaining ground. After going about 150 yards the stoat was within a yard of the rabbit, when the latter suddenly stopped and squatted, and at the same time ceased to scream. The stoat stopped also, but, instead of attacking the rabbit, squatted also in front of and face to face with it about a foot off, and there they remained motionless, the rabbit apparently paralysed with fear. The occupier of the farm, who happened to be on the road, went into the field, and on his approach the stoat ran off; whilst the rabbit allowed him to pick it up, and he brought it to us and placed it in my carriage. The animal's eyes were closed, the heart was palpitating most violently, and the breathing very rapid. It lay on its side for some minutes motionless, and I thought it would die. A careful examination failed to detect any injury whatever. After a time it slowly recovered, and we turned it loose again." Several examples of the stoat have occurred in the county, in partial "ermine" or winter dress. I have not seen any purely white local specimens.

Mustela vulgaris (Gmel.). Weasel.—Generally met with, and resident. One, presented to the Leicester Museum on November 14th, 1851, was killed in Princess Street, close to the Museum. Harley says—"This species hunts down the Grey Rat with wonderful daring and spirit. It also preys on the Water Rat, and for that purpose, the writer of these notes on its history, has seen the little intrepid fellow trace out the runs of that quiet, harmless animal with much address and great cunning, surpassing even the adroitness and agility of the Ferret." During the early part of December, 1856, according to a MS. note dated December 5th, 1856, by Harley, who examined the specimen, a Weasel, pure white, even to the extremity of the tail, was captured near Leicester. Bell, in his 'British Quadrupeds,' remarks on the rarity of such variation in the Weasel; and Harley states that the white specimen above noticed is the only one of the kind he ever met with. It might be supposed that Harley had possibly mistaken a small Stoat for a Weasel; but he adds:—"The Stoat—its congener—becomes white in the dreary season of the winter, throughout, save the tip of its tail, the hair of which generally remains black. The change of dress and the variegated exterior of the Weasel is certainly of less common occurrence, if not very rare."

Meles taxus (Bodd.). Common Badger.—Generally dispersed, but not common. Writing of this animal 1840-50, Harley appears to have found it, even at that date, increasingly rare; for he writes—"Formerly well distributed over the county, abounding in most large woods, especially those verging on the Forest of Charnwood. The woods of Gopsall and Oakley also bore marks of its retreat, even till within a very recent date. Used also to occur at Mere Hill Wood, near Loughborough. Not common." The Leicester Museum possessed two specimens marked "Leicestershire," and the Donation-book of the Leicester Museum records the presentation—on April 2nd, 1860—of a Badger shot at Keythorpe Hall. Mr. Geoffrey Palmer, of Withcote Hall, informed me that it bred in the adjoining woods. There is no doubt that, although rare, it is still to be met with breeding in the county; for the Rev. A. Matthews, of Gumley, forwarded a half-grown living specimen—a male—to the Leicester Museum on June 28th, 1884. Mr. H. S. Davenport writes (February 4th, 1885)—"Badgers are bred in Owston Wood; Ram's Head, at Keythorpe; and Sir F. Fowke's spinneys at Tilton-on-the-Hill, most years." Mr. R. Widdowson writes, February 6th, 1885—"A great many instances of Badgers being killed within a few miles of us within the last year or two; have had two from Hoby. A friend residing at Eaton, near Waltham-on-the-Wolds, had, about four months ago, three within a week; two were young." Mr. W. Ingram, writing February 7th, 1885, says—"Badgers breed in our woods, but are rarely found away from their earths. I have known of but two instances of Badgers being found above ground by the fox-hounds and killed. Keepers tell me that they occasionally see a family of Badgers returning to their lair, trotting in a line behind a leader just before daybreak."

Lutra vulgaris, Erxl. Common Otter. — Resident, and breeding occasionally, but rare. According to Harley's observation, the Otter "occurs occasionally, being found on the banks of the rivers Soar, Trent, and Wreke." He was present at the capture of a female Otter and four young ones in the spring of 1817. The young Otters were taken from a rude lair, matted with rushes and flags which the dam had carefully conveyed through a hole, and concealed within a decayed pollard willow on the banks of the River Soar, near to the upper mills in the parish of Loughborough. On being surprised the old Otter fought the dogs furiously, and was with difficulty overcome. The young, which had attained to the size of a large water rat, were still blind. Loughborough seems to have kept up its breed of Otters since Harley's time, for seeing a notice in the local papers as to the occurrence of two young Otters near Loughborough in March, 1884, I sent a telegram on the 22nd to Mr. Dakin, a fishmonger of this town, hoping to get the specimens for the Museum; and received a reply—"Two were killed, but only one obtained. There are more about." Mr. R. Widdowson, writing February 6th, 1885, says—"I heard last week of one being seen at Brentingby; I had one some years ago from the same locality." The Leicester Museum possessed one killed near Enderby, September 28th, 1849; and "J. B.," writing in the 'Chronicle and Mercury,' February 28th, 1885, says—"Between sixty and seventy years back Squire Smith, of Enderby, kept a pack of Otter-hounds. A large Otter, stuffed and in a case, has been at the 'Narborough Inn' for many years past. The late Mr. Wm. Sansome was gamekeeper, and, I believe, shot it."

Fossil Carnivora.—It is somewhat singular that no remains of this Order should have, as yet, been discovered in the post-tertiaries of Leicestershire. Taking into consideration the fact of the occurrence in the county of several Ungulates contemporaneous with such Carnivora as *Ursus spelæus*, *Felis spelæus*, &c., it is really extraordinary that no vestiges of the latter Order have been discovered. Writing to my friend Mr. H. E. Quilter, a well-known Leicestershire geologist, upon this subject, I received the following reply:—" I have thought over the question as to remains of Carnivora in our post-tertiary deposits, and, although I have seen a good many remains of other orders, have never recognised any as belonging to the Carnivora. They are not mentioned, I find, in Ansted's 'Geology of Leicestershire,' in J. W. Judd's 'Geological Survey and Memoir of the County,' nor in Harrison's 'Geology.' This seems strange, as they are found in post-tertiaries near Stamford and Peterborough: *Hyæna* in a cave near Stamford, *Hyæna spelæa* and *Canis lupus* in estuarine gravels near Peterborough. Possibly other conditions prevailed which prevented their living hereabout, or, it may be, we have not representatives of the beds in which their remains (Carnivora) are found in neighbouring localities."

(To be continued.)

ON TWO FORMS OF *RANA* FROM N.W. SPAIN.

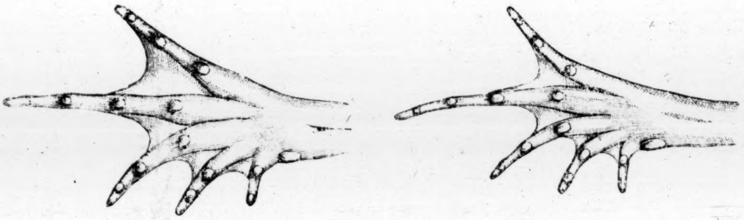
By Victor Lopez Seoane.

The increasing interest which is paid to the variations of European Reptiles and Batrachians has led to the discovery of many forms which link together species hitherto regarded as perfectly separated. The Spanish Peninsula has yielded several such forms, but there remains a great deal to do, especially in the comparison of the commonest species with their representatives in other countries. This induces me not to delay further the publication of the following notes on *Rana esculenta* and *R. temporaria*.

1. Rana temporaria parvipalmata, subsp. nov.—Although too closely related to *R. temporaria* (*R. fusca*, Rös.) to justify a specific separation, the land frog of Galice is so easily distinguished from it that it deserves a special denomination. The most striking difference resides in the shorter web between the toes, as well during as after the breeding season. In the typical *R. temporaria post-nuptias* the toes are always at least two-thirds webbed, phalanges II. of the first toe, II. and III. on the inner side and III. on the outer side of the second and third, III. and IV. of the fourth, and III. of the fifth, remaining free; and *nuptiis tempore* the membrane reaches to nearly the extremity of

all the toes on the outer side and to the very tip of the fifth toe. In *R. t. parvipalmata*, in summer, the following phalanges are free:—I. and II. of first toe; I. and II. of second on the inner side, and II. and half of I., or even both I. and II., on the outer; half of I. and II. and III. (or all three) on the inner side, and II. and III. on the outer side of third; II., III. and IV. of fourth, and II. and III. (or only half of II.) of fifth.

During the breeding season the web is a little more extensive, but never greater than that of *R. temporaria typica* when most reduced. The toes in the latter form may be termed three-fourths webbed in the spring, and two-thirds in the summer; and in *R. parvipalmata* two-thirds webbed in the spring and half webbed in summer.



Feet of *Rana temporaria parvipalmata*.

Although so short a web is not known to occur in *R. temporaria* of Northern and Central Europe, an allied species, *R. arvalis*, not unfrequently resembles the Spanish frog in this respect. In other characters this form agrees with the typical *R. temporaria*, except that the interorbital space is usually a little narrower, and the nostril is nearer the eye than the tip of the snout. There are likewise specimens with shorter and blunter or longer and more pointed snout, and with longer or shorter limbs; the tibiotarsal articulation, however, never reaches beyond the tip of the snout.

The coloration of the upper parts varies considerably, and nearly to the same extent as in the typical form; reddish specimens are the most frequent. The lower surfaces are usually yellow or cream-coloured, more or less profusely spotted with red, and with small brown spots or vermiculations on the throat. After immersion in spirits the lower parts assume a rather peculiar aspect, which, in many cases, readily distinguishes this form from its ally. The red and yellow having entirely disappeared, these parts are white, with brown vermiculations on the throat, leaving an unspotted median longitudinal zone, as seen in *R. latastii;* the belly is immaculate, except sometimes with a few brown spots on the sides near the breast.

The skull differs slightly from that of *R. temporaria*, the frontal-parietal being slightly convex, and the upper part of the ethmoid acute anteriorly.

The testicles are very large and abundantly pigmented, often entirely black.

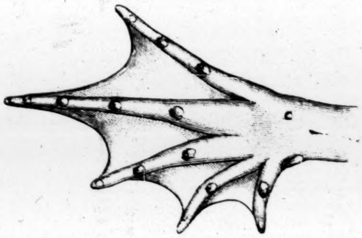
DIMENSIONS.		Male.	Female.	Young.
From snout to vent	millim.	60	65	55
Length of head (to occiput)	,,	18	18	15
Width of head (at angles of jaws)	,,	17	19	15
From eye to end of snout ...	,,	7	7	6
,, nostril	,,	3	3	2.5
Diameter of the eye ...	,,	6	6	4
Interorbital space	,,	3	3	2.5
Diameter of the tympanum	,,	4	4	3.5
From eye to tympanum ...	,,	2	2	1.5
Fore limb	,,	36	38	31
Hand	,,	13	14	11
Hind limb (from vent) ...	,,	101	105	89
Tibia	,,	26	31	25
Foot	,,	32	32	27
First toe	,,	5	6	5
Inner metatarsal tubercle ...	,,	3	2.5	2

Rana temporaria parvipalmata inhabits the north-west of Spain, equally common from the level of the sea to an elevation of 1422 feet. Near Pontevedra, Tuy, and Ferrol, it occurs conjointly with *Rana iberica*.

2. RANA ESCULENTA PEREZI, subsp. nov.—The aquatic frog of North-western Spain and Portugal differs so considerably from the typical *R. esculenta* figured by Rösel, that it surely deserves to be regarded as a distinct race or subspecies; although nearer the Prussian race, *R. esculenta fortis*, and the Algerian *R. esculenta latastii*, I should not feel disposed to unite it with either.

Head not much depressed, the snout rather short and very obtuse, the loreal regions not very oblique; nostril nearly equally distant from the eye and the tip of the snout; interorbital space barely half the diameter of the upper eyelid;

tympanum two-thirds the diameter of the eye. Hind limb variable in length, the tibio-tarsal articulation reaching either the posterior border of the orbit, or half-way between the eye and the nostril, or between those points. Inner metatarsal tubercle extremely small, elliptical, not at all prominent; its length one-third or one-fourth that of the inner toe. Skin feebly warty; glandular lateral fold moderately prominent, narrower than the upper eyelid. Upper parts of a brighter or duller green, spotted with black; a lighter green vertebral line present in most cases; tympanum and glandular lateral fold bronzy; flanks marbled with black. Limbs with more or less irregular black cross bars; no yellow on the hind side of the thighs. Lower surfaces white, spotted or marbled with blackish.



Foot of *Rana esculenta perezi.*

DIMENSIONS.		Male.	Female.	Female.
From snout to vent	millim.	59	65	72
Length of head	,,	22	22	24
Width of head	,,	23	24	27
From eye to end of snout ...	,,	9	10.5	11
,, nostril... ...	,,	4.5	5	6
Diameter of the eye	,,	7	7	7.5
Interorbital space	,,	2	2	2.5
Diameter of the tympanum ...	,,	4.5	4.5	5
Fore limb	,,	35	36	37
Hand	,,	14	15	16
Hind limb	,,	98	110	108
Tibia	,,	27	33	32
Foot	,,	31	37	36
First toe	,,	8	9.5	9
Inner metatarsal tubercle ...	,,	2.5	2.5	2.5

Found everywhere, up to an elevation of 1424 feet.

In describing this new form, I have pleasure in associating with it the name of my esteemed friend Prof. Perez Arcas.

ORNITHOLOGICAL NOTES FROM NORTH NORFOLK.

By J. H. Gurney, Jun., F.Z.S.

Roller.—On June 6th a very good female Roller was shot at Gresham, near Cromer, and is now in the possession of Mr. Page.

Black Redstart.—On October 21st and 22nd I went to Blakenny with Mr. H. Seebohm; the weather was propitious, but the Sandpipers very wild. No Bluethroats showed themselves, but a pair of Black Redstarts had taken up their quarters on the coastguard's little house, standing by itself far away from any other habitation, and Mr. Seebohm shot the female. This is a very rare Norfolk bird, though in December, 1875, a male in change was shot at Blakeney (Zool., p. 4894), and about four others have been obtained in the county.

Rock Pipit.—There had evidently been a great arrival of Rock Pipits, a species which is rare on our coast (where there are not any rocks), except on migration, and we must have seen at least four hundred. There is good reason for supposing it has bred with us once (*cf.* Norw. Nat. Trans. iii. p. 346). Half-a-dozen shot for identification did not include an example of the Scandinavian form (*Anthus rupestris*), said to be "not infrequent on the Yorkshire and Lincolnshire coasts in the autumn" (Fifth Report on Migration, p. 41), and which has occurred thrice in Norfolk, but each time inland. On November 16th six Rock Pipits were caught alive in clap-nets at Yarmouth, and taken to Mr. G. Smith, who informs me that he has had eighteen brought to him alive. It is not so long since this bird was considered nearly as rare in Norfolk as the Shore Lark.

Hooded Crow.—Seen by us at Blakeney on the 21st constantly coming from the sea, and flying by the compass W.N.W. If they pursued this course from starting their last resting-place must have been Amsterdam. It is solely owing to the wind that they are made to cross the sea in this retrograde fashion.

Gulls.—Exactly the same course was being pursued by parties of Gulls—mostly the Herring and Greater Black-backed. I do not think five minutes ever elapsed until the evening, when their numbers slackened, without some passing overhead. This is not so remarkable while we have a westerly or north-westerly wind,—and these winds prevail very much in the autumn,—but that they should continue to go west when the wind had changed to the south, as it did on the 22nd, was a new thing; for Gulls almost invariably fly against the wind, but it is true the wind was moderate. If there had been much I am sure they must have flown against it. By far the largest migration of Gulls we had last year at Cromer was on October 11th. There had been a gale in the night from N.N.W., and at 11 a.m. not a Gull was to be seen. Exactly when the "passage" began I do not know, but it must have been soon after this. I did not go down to the shore again until 3 p.m., when the wind was still west, but greatly moderated; numbers of Gulls were then passing Cromer. How long they continued passing I am unable to say, as I could not stay and watch it out, but if they continued passing six hours, which I am sure is a low computation, 10,800 Gulls must have passed,—a number which the sea-board of Norfolk could not supply,—chiefly young Herring Gulls and Lesser Black-backs, with some Common Gulls, and a few adults of the Greater Black-backed, and now and then, though much more rarely, a Black-headed Gull. This is reckoning that three flocks passed every two minutes, varying from fifteen to thirty in each flock. Every bird was going in the same direction, *viz.*, following our coast-line, which is W.N.W. On the 12th, the next day, I had the curiosity to go down to the shore at 8 a.m., and again at 4 p.m.; the wind was in much the same quarter,—N.W., and strong,—but not a Gull was to be seen.

WOODCOCK.—On the same day that the Gulls were passing Cromer, a gunner at Blakeney, a very intelligent man named Brett, on whose word I can depend, picked up four drowned Woodcocks, and saw also a number of Grey Crows, Larks, and Thrushes washed up by the sea, and met another man named Striker, who had six more Woodcocks, all picked up. They also saw two which had reached land alive. This shows that Grey Crows, which are by some people supposed to be exclusively day migrants, migrate also at night. It also shows that Woodcocks do not wait for an easterly wind, as many gamekeepers will tell you, and many an old sportsman, too, but generally cross the North Sea with a westerly one. In 1883 I had three or four from lighthouses, which were killed during westerly or north-westerly winds. In 1884 a flight was distinctly noted at Cromer, in the woods near the sea, on November 6th. The wind the day before was S.S.W., and the Woodcocks probably arrived in the night. I know that many writers, in 'The Zoologist' and elsewhere, have asserted that Woodcocks come with an east wind, but my observations rather coincide with Mr. Hele's on the coast of Suffolk (*vide* 'Notes about Aldeburgh,' p. 122). From the 1st of October to the 1st of January we only had the wind from the east three times. On October 5th we had three days of it, on November 18th four days, and on December 21st a longer spell, but there was no special arrival of Woodcocks coincident with any of these dates. At the same time it would be wrong to deny that there are exceptions to the rule, though they are certainly rare on this coast. In 1883, as we learn from the 'Report on Migration' (p. 51), the great flight, covering the whole of the east coast from Yarmouth to the Farne Islands, was on the nights of October 28th and 29th, and on those two dates the wind was registered by the Meteorological Office as S. to E., light, and E.S.E. to N.E., light.

THE MOLLUSCA OF THE COUNTIES OF KENT, SURREY AND MIDDLESEX.

By T. D. A. Cockerell.

(Continued from p. 97.)

Marine Gasteropoda.

Chiton fascicularis, *C. cinereus* and *C. marginatus*.—All occur at Margate; the last seems to be the commonest. [All these at Hastings, but *marginatus* not so common (E. L.).]

Patella vulgata is of course common. Var. *elevata* is found at Margate, and I have obtained much worn shells of var. *depressa* at Shellness.

Helcion pellucidum.— Abundant and fine at Margate. Var. *lævis* is sometimes found. [It is notable that while var. *lævis* is not rare alive at Eastbourne (S. C. C.), only one specimen of the typical form has been taken on that coast, at Hastings (E. L.), while at Margate the type is very much more abundant than the variety].

Acmæa (*Tectura*) *virginea.*—Common at Margate. [Scarce at Hastings (E. L.).]

Emarginula fissura.—Shellness, rare.

E. rosea.—Shellness (S. C. C. and D. B. C.). [Both rare at Hastings (E. L.).]

Fissurella græca.—Shellness, abundant. I have a specimen of a variety which has the shell more raised and the outer surface more convex than in the type.

Capulus hungaricus. — Shellness, a very worn specimen (S. C. C.).

Calyptræa chinensis.—Near Ramsgate (J. T. Hillier).

Trochus tumidus.—Shellness, common, but worn.

T. cinerarius.—Margate, abundant. Var. *electissima*, Shellness.

T. striatus and *T. montacuti.*—Shellness, worn specimens of each (S. C. C.).

T. exasperatus.—Margate (Hanley). [Also said to have been taken in Sussex.]

T. zizyphinus.—Margate, &c., common. Var. *Lyonsii*, Shellness (S. C. C.). [Hastings (E. L.).] At Shellness I found a very much worn and broken specimen of var. *lævigata*, which seems to agree exactly with the definition of this variety. [*T. magus*, Sussex.]

Phasianella pulla.—Margate and Shellness, abundant.

Lacuna divaricata and *L. puteolus.*—Margate.

L. crassior.—Shellness.

L. pallidula.—Margate. The specimens belong to a variety allied to, put possibly not identical with, var. *patula*.

Littorina obtusata.—Abundant and very variable.

L. rudis.—Margate, locally abundant. Var. *tenebrosa*, Kent (Capt. Brown).

L. litorea.—Margate, &c.

Rissoa cancellata.—Shellness (S. C. C.). *R. costata*, Margate.

R. parva and var. *interrupta.*—Margate; the variety is much more numerous than the typical form.

R. membranacea.—Margate, scarce.

[*R. violacea.*—Sussex].

R. striata.— Margate, abundant. [One dead shell only at Hastings (E. L.).]

[*R. costulata.*—Worthing (Rich.).]

R. semistriata.—Margate. [Hastings, scarce, living (E. L.).]

R. striatula and *R. calathus.* — Both these are recorded as Kentish in Gwyn Jeffreys' 'British Conchology.'

R. reticulata.—Sandwich (Capt. Brown).

[*R. inconspicua* var. *ventrosa.*—Essex (Jeffreys).]

[*R. cingillus.*—Scarce, but living, at Hastings (E. L.).]

Cœcum glabrum.—Near Ramsgate (J. T. Hillier).

C. trachea.—Sandwich (Walker).

Homalogyra rota.—Sandwich (Jeffreys).

Turritella terebra.—Shellness, worn (S. C. C.).

Scalaria communis.—Shellness and Margate.

S. clathratula.—Margate, not rare.

Aclis unica. — One individual occurred in shell-sand; it was identified by the late Dr. Gwyn Jeffreys. *A. gulsonæ* has been reported as Kentish. [*A. supranitida,* Hastings (Brit. Conch.).]

Odostomia acuta, O. plicata, O. lactea, O. indistincta, and *O. unidentata.*—Found in shell-sand; *lactea* abundantly.

O. rissoides.—I have a specimen from Shellness which I believe to belong to this species.

O. dolioliformis.—Sandwich (Jeffreys). [The Hastings members of this genus are *O. pallida, O. acuta, O. spiralis,* and *O. lactea,* all of them scarce (E. L.).]

Eulinea polita.—Margate, in shell-sand.

Natica catena.—This species is found in a semi-fossil state in a raised beach at Pegwell Bay, with *S. piperata, T. balthica, C. edule, M. stultorum,* and others. Living specimens are common at Shellness.

N. alderi.—Margate. [Hastings, type common; var. *lactea,* rare (E. L.).]

Adeorbis subcarinatus. — Margate, rare. [Hastings, rare (E. L.).]

Lamellaria perspicua.—Margate, rare (S. C. C.).

Velutina lævigata.—Pegwell Bay (S. C. C.); one very young shell at Margate.

[*Aporrhais pespelecani.*—One dead shell at Hastings (E. L.).]

Cerithium reticulatum and *C. perversum.*—Both at Margate, the latter more rarely.

Cerithiopsis tubercularis.—Margate, common.

Purpura lapillus.—Common. Var. *major,* Shellness (S. C. C.). [Hastings (E. L.).]

Buccinum undatum.—Very abundant. [Var. *littoralis* not uncommon at Hastings (E. L.).] Monst. *sinistrorsum*, m. *carinatum*, m. *imperiale*, and m. *acuminatum*, near Ramsgate (J. T. Hillier); monst. *conico-operculatum* and m. *bioperculatum* have also been found. [Monst. *sinistrorsum* and m. *acuminatum*, Hastings, rare (E. L.).] I once found a nice specimen of m. *acuminatum* in a ditch with other whelks at Acton, in Middlesex! and many good things would, I doubt not, fall to the lot of anyone who should assiduously search these refuse-heaps of whelks in the neighbourhood of the Metropolis. In this way I obtained numbers of *Fusus gracilis*, and a still more remarkable capture was a number of *Crypta fornicata*, an American shell, allied to *Calyptræa*, which had come on New York oysters, and had been thrown away with the shells.

Murex erinaceus.—Shellness and Margate.

Fusus antiquus.—Common. Monstrosities caused probably by the growth of an annelid in the suture, such as the one recorded by Mr. Lovett, are occasionally found. There are some in the British Museum labelled "Pegwell Bay."

F. gracilis.—Near Ramsgate (J. T. Hillier). [Not uncommon at Hastings (E. L.).]

Nassa reticulata.—Margate, common.

N. nitida.—Muddy estuaries of Thames and Orwell, abundant (Brit. Conch.).

N. incrassata.—Very abundant. The Shellness specimens are larger and more elongated than those from Margate.

[*N. pygmæa.*—Rare at Hastings, dead (E. L.).]

Defrancia linearis. — Margate, not very rare. [Hastings (S. C. C.).]

Pleurotoma rufa and *P. turricula.*—Margate; the first is the most common. *P. septangularis*, Shellness, 1883.

P. lævigata.—Shellness, broken, worn, and very rare.

P. attenuata and *P. costata.*—Margate (S. C. C.).

[*P. costata.*—Three dead shells at Hastings (E. L.).]

Cypræa europæa. — Abundant. There are two forms, one spotted and the other spotless. *Var.*, shell small, about a quarter of an inch in length. Margate (D. B. C.).

Utriculus obtusus. — Margate. I have also two specimens which seem to belong to the var. *Lajonkaireana*.

U. mamillatus.—One shell taken, apparently this species.

Actæon tornatilis.—One at Margate (S. C. C.).

[*Scaphander lignarius.*—One shell at Hastings (E. L.).]

Philine aperta.—Shellness (S. C. C.). *P. catena*, Margate, rare.

Pleurobranchus membranaceus.—Pegwell Bay (Science Gossip, 1870, p. 64).

Of the Nudibranchs I have found a small light-coloured *Doris* in a rock-pool at Dover, and two specimens of *Eolis* have been taken at Margate. I do not know this section sufficiently well to be able to identify them with certainty. [Hastings Nudibranchs, *Doris bilineata* (*bilamellata?*), *Eolis papillosa*, *E. pellucida?*, *Idalia aspersa?* (Science Gossip, Sept. 1869).]

ESTUARINE GASTROPODA.

Hydrobia ventrosa.—Greenwich Marshes, with *L. peregra* and *Planorbis spirorbis.* East Kent, Richborough (S. C. C.). [Hastings (E. L.).] Var. *elongata*, Erith Marshes, with *H. ulvæ* (Leslie).

H. similis.—Woolwich.

H. ulvæ.—St. Nicholas Marsh and Pegwell Bay, abundant.

Hydrobia marginata is found fossil at Crayford and Erith (R. W. Cheadle and B. B. Woodward), and still survives in France.

Assiminea grayana.—Sandwich (D. B. C. & S. C. C.). Nagden (M. A. Oldroyd). Near Greenwich.

Melampus myosotis.—Richborough, in rejectamenta of River Stour; type abundant, var. *ringens* one only. Type at Erith (Leslie).

M. bidentatus.—Richborough, one in rejectamenta of River Stour (S. C. C.).

Otina otis.—Sandwich and Reculvers (Brit. Conch.).

FLUVIATILE GASTROPODA.

Neritina fluviatilis.—Abundant in the Thames at Hammersmith. Weybridge (M'Kean). Dead shells are sometimes thrown up by the sea at Margate, but their derivation is doubtful. [This species is also reported from both divisions of Sussex, and from Bucks.]

N. consobrina, *N. globosa*, and *N. elegans* are found in the fossil state.

Ampullaria occurs fossil in Surrey (E. H. Rowe).

Paludina contecta.—Middlesex, West Drayton (R. W. Cheadle). Flanchford, near Reigate (E. Saunders); it does not appear to live there now (K. M'Kean). [Reading (W. Holland); also reported from Bucks.]

P. vivipara.—River Brent, Guildford, &c. Var. *efasciata*, Richmond. River Lea near Tottenham (C. Ashford, S. Tuke, and T. Godlee). [Type, Sussex, Hants and Herts; var. *efasciata*, Herts.]

Fossil species, *P. aspera*, *P. lenta*, and *P. rugosa*, in Woolwich beds; *P. vivipara* and *P. contecta*, Pleistocene (Cheadle and Woodward).

Bythinia tentaculata.—Kent, Ebbsfleet, Herne Bay, St. Mary Cray. Surrey: Kew, Guildford. Middlesex: Regent's Park; my brother (S. C. C.) has some interesting banded specimens from this locality. [Hants, Sussex, Herts, and Bucks; Dagenham Lake, Essex (E. H. Rowe).] Var. *ventricosa*, Richmond. Var. *excavata*, Woolwich. Var. *albida*, Regent's Park (S. C. C.); also found in East Kent; [Hants: Preston Candover, scarce (P. Fitzgerald).] Monst. *decollatum*. Surrey: Barnes.

B. Leachii. — East Kent: Ebbsfleet. Surrey: Guildford; rejectamenta of Thames at Kew. Middlesex: Paddington Canal. [East Sussex: Pevensey. Herts: Ware (Jeffreys). Essex: Dagenham Lake (E. H. Rowe).] Var. *elongata* is reported from Woolwich Marshes.

Valvata piscinalis.—Middlesex (S. C. C.). East Kent, Richborough; West Kent, St. Mary's Cray. Surrey: rejectamenta of River Thames at Kew; Waddon (M'Kean). [Also reported for Hants, Herts, Sussex, and Bucks.] Var. *subcylindrica*, a dead shell near Hammersmith, on Surrey side of river.

Valvata cristata.—Middlesex: Ealing (T. C.); River Lea at Tottenham, on caddis-cases (C. Ashford). Surrey: rejectamenta of River Thames at Kew; Barnes (T. C.); Waddon (M'Kean). East Kent: rejectamenta of River Stour at Richborough; Ebbsfleet; Minster. West Kent: St. Mary's Cray (S. C. C.); pond near Sevenoaks. [Hants, scarce at Preston Candover (P. Fitzgerald). Sussex: Pevensey. Herts: Ware (Jeffreys).]

Melania and *Melanopsis* are found fossil in the Woolwich beds.

(To be continued.)

NOTES AND QUERIES.

The Ornithology of Japan.—Capt. Blakiston, who has been resident in Japan for more than twenty years, has published an amended list of the birds of that country, with the Ornithology of which he certainly possesses a better practical acquaintance than any one else. The list is founded on a previous catalogue prepared in 1882 by himself and Mr. H. Pryer; but the species are now arranged geographically, so as to show the distribution of birds through the different islands of Japan. The author draws attention to the natural division in the fauna of Japan, which is marked by the Strait of Tsungaru, to the southward of which the true Japanese avifauna is emphasised, while north of this Strait the avifauna is Siberian in character.

The Marine Biological Association.—We understand that a paper treating of the aims and objects of the Marine Biological Association will be read at the rooms of the Society of Arts, on Wednesday, May 13th, at 8 p.m. The site for the building which is to be erected at Plymouth has, with the consent of the Town Council, been approved by the authorities of the War Office.

BIRDS.

Notes on the Ornithology of Northamptonshire.—I resume my notes from my last date, Sept. 14, 1884 (Zool. 1884, p. 455):—

Sept. 19. A Cuckoo was seen near Lilford on this day.

Sept. 20. The last Landrail, *Crex pratensis*, of the season shot near Titchmarsh.

Sept. 23. Three Teal, *Anas crecca*, seen near Aldwincle for the first time this autumn.

Sept. 24. Two Green Sandpipers, *Totanus ochropus*, at Lilford Park ponds; this species has been unusually scarce in our neighbourhood this summer.

Sept. 26. Grey Wagtails, *Motacilla melanope*, appeared about this date in some numbers.

Sept. 30. We saw the first Merlin, *Falco æsalon*, of the season.

Oct. 2. A small trip of Golden Plovers, *Charadrius pluvialis*, observed for the first time this autumn.

Oct. 5. Four Wild Geese, *Anser* sp. ?, seen on pasture land near Thorpe.

Oct. 6. A Grey Crow, *Corvus cornix*, shot near Lilford; we have little doubt, however, as to having seen one of this species, at a great distance, on the 1st inst.

Oct. 11. Fieldfare, *Turdus pilaris*, first seen in our neighbourhood this autumn.

Oct. 14. Two Siskins, *Chrysomitris spinus*, seen near Lilford, for the first time this season.

Oct. 15. A wild Tiercel, *Falco peregrinus*, male (the first of its species seen by us this autumn), came to assist one of our trained Falcons in a flight at Partridges, near Wigsthorpe; this bird, or another of the same species and sex, was seen near the house at Lilford on the 17th inst. Seven Bramblings, *Fringilla montifringilla*, caught by a birdcatcher in our employ, near Achurch, on this and previous day.

Oct. 16. First Woodcock, *Scolopax rusticula*, of the season seen in our neighbourhood.

Oct. 18. A large slow-flying hawk, which, from the description given to us, must have been a Harrier, *Circus cyaneus* or *C. cineraceus*, was twice seen by our head gamekeeper near Achurch.

Nov. 6. Swallow, *Hirundo rustica*, seen near Pilton.

Nov. 13. Tufted Duck, *Fuligula cristata*, female, shot by one of our gamekeepers, on the Nene near Thrapston.

Nov. 22. Pochard, *Fuligula rufina*, shot on the Nene near Aldwinkle.

Nov. 27. A young Puffin, *Fratercula arctica*, sent to Lilford, alive, for me, but died the next day. This bird, as I was informed by my brother-in-law, who sent it to me, was picked up about three days previously in a farmyard at Yoke Hill, near Benefield.

Dec. 6. Two large trips of Golden Plover, *Charadrius pluvialis*, observed going southwards up the Nene valley near Aldwinkle.

Dec. 18. Cirl Bunting, *Emberiza cirlus*, female, caught by a birdcatcher in our employ, on a farm of ours not far from Bythorn. This is only the second instance of the occurrence of this species in our own county which has come to our knowledge. The individual just recorded was taken alive, but only survived its capture for a day or two.

Dec. 29. A Gadwall, *Anas strepera*, male, one of two which had haunted the ponds near Lilford for some days, was this day shot at our aviary pond. This is the first Northamptonshire specimen which we have handled in the flesh; but we have little doubt that this species is not so rare with us as is generally supposed.

Jan. 2, 1885. We this day, in answer to our enquiries, received a letter from Mr. H. Capron, of Southwick Hall, Oundle, in which he informs us that during the month of July last, he several times met with young Snipes, *Scolopax gallinago*, only just able to fly, on the banks of the Nene, near Tansor. This is the first positive evidence we have received of the breeding of this species in our neighbourhood, though we have long had reason to believe that a pair or two of Snipes occasionally remained to breed in our swampy meadows.

Jan. 20—25. Three Tufted Ducks, *Fuligula cristata*, were shot by Mr. G. Hunt on the Nene, in our neighbourhood, between these dates.

Feb. 11. We received a young Kittiwake, *Rissa tridactyla*, in the flesh, from the Rev. E. Freeman, rector of Clapton, who informed us that the bird had been picked up near this village a few days previously. We have met with this species in our neighbourhood on several previous occasions, but consider it the least common of the six species of Gull which occasionally visit us.

Feb. 26. First eggs of Wild Duck, *Anas boschas*, of the season, found near Lilford.—Lilford (March 22, 1885).

Red Grouse in Somerset and Wilts.—Some doubt seems to have been thrown on the occurrence of Red Grouse in Somerset and Wilts, as recorded in recent numbers ef 'The Zoologist.' A Red Grouse was killed, within my own recollection, in a far more improbable locality than the Mendips—namely, at Knowlton Court, the seat of the late Admiral Hughes D'Aeth, within two miles of my own residence, and about ten miles inland from Dover. I cannot give the date, as the time is so far back, and my memory does not serve me, and the present owner, Mr. D'Aeth, has no record to refer to; I should think, however, it is full fifty years since. The bird, a female, is still in the hall at Knowlton Court, and I saw it only a few days ago. It was killed in the "Home Wood"—to add to the singularity of the locality. Whether these birds in Somerset and Kent had drifted south from the Derbyshire moors, or were escaped birds, it is difficult to say. But the latter conjecture, though I think it the least probable of the two, is not impossible, since I remember a Red Grouse having been brought from the Yorkshire moors to a house (Hampton's) in West Kent, where it lived for several years in a cage in the hall. This was an old cock bird, and its constant call in the morning used to echo through the house. Had this bird made its escape by any accident, and been shot, it would have been but one more instance, and there is no reason why Grouse may not have been kept in confinement elsewhere and escaped.—W. Oxenden Hammond (St. Albans Court, Wingham, Kent).

Unusual congregation of Carrion Crows.—About 4 p.m. on the 28th December last my brother and I saw collected in some trees near an oak spinney at Bloxham Grove, Oxon, where these birds always roost in winter, an assemblage of Carrion Crows, which we calculated must have numbered 200 birds at least—small bodies of them frequently shifting their quarters made it impossible to count accurately. In severe weather our Crows almost entirely leave us, and as there were only a few about the roost the evening before, I think this great congregation may have consisted of passing visitors, moving gradually southward, the wind being N.E., and the weather cold about that time. I do not think they could have been our home birds, collected together in view of a migration, because, in the first place, common as the Crow is here, I do not think we could muster quite such a host as this in any one part of the district; and, secondly, it is usual for them to disappear by degrees, and not all at once.—OLIVER V. APLIN (Great Bourton, near Banbury).

Variety of Jackdaw and Chaffinch.—A Jackdaw was shot Dec. 10th and brought to my stuffer, who purchased it for me; it is of a dark stone-colour all over, with the outer edges of flight-feathers cream-colour. A neighbour sent me a Chaffinch the other day of several shades lighter than one in normal plumage, the white in the wings being replaced by yellow, back blue-grey, rump yellow, and tail light yellow-grey; a male bird.—J. WHITAKER (Rainworth Lodge, Notts).

Natural History Notes from Yorkshire.—I had few opportunities of field observation in this county last autumn, but I have since collected a few notes from competent observers, adding my own limited experience. The Grey Wagtail, which visits these lowland districts in late autumn, retires to the N.W. moorland streams in spring; it rarely breeds in South Yorkshire. On November 26th Hooded Crows were in the low-flooded grounds about Wath-on-Dearne, and Fieldfares, Redwings, Jack Snipes, and Woodcocks had arrived from northern countries. The Woodcock has bred rarely near Cannon Hall and Stainborough parks. On December 2nd Golden Plover, Lapwing, and Common Snipe were observed. These breed on the west moors, rarely on our low lands. On December 8th heard the Sky Lark uttering its cheery notes. The Robin sang throughout the winter. On December 20th Jackdaws and Rooks were seeking food after frost or rain in fields near the town. On January 2nd a female Merlin was brought to me from Thurnscoe. This small falcon is scarce; I have seen one take a bird on the wing, and one was caught in a thick bush near Barnsley. Several have been noted by the late W. Talbot in his list of the Birds of Wakefield. On January 4th Mr. Hailstone, of Walton Hall, wrote to me that the lake was visited by a flock of from 400 to 500 wild ducks; a female Goosander had been observed on several days, at times close to the hall. He has informed me, in former winters, of hundreds of waterfowl on and about his lake, where I am happy to say they still have protection, as in Waterton's time. The Herons are occasional visitors, but could not be induced to stay after their nesting-trees were cut down. On January 9th a Water Rail (scarce), Little Grebes, Herons, Pochards, and Kingfishers were reported on pools and streams. Most of our resident songsters uttered their songs in February and early in March.—T. LISTER (Barnsley).

Grey Shrikes in Oxfordshire.—A fine example of the Great Grey Shrike, the typical form with two well-developed white wing-spots, was shot on the borders of Oxfordshire, near Chacombe, on December 26th last. It was not sexed, but, from the breast being marked with small semilunar dark marks, and the clear grey upper parts giving it otherwise an appearance of maturity, I imagine it is a female. On February 26th another was shot on the borders of Oxon and North Hants, in the neighbourhood of Chipping Warden, and came into my possession in the flesh. It has only a little white at the bases of the secondaries, quite hidden by the coverts, and, although a female, is only very slightly marked on the under parts—hardly at all, in fact. To which form would this belong? If a young bird of *excubitor*, it would be more marked beneath; and the true Pallas' Shrike is said (Yarrell, 4th ed., vol. i., p. 203) to be marked at all ages. Is it intermediate? Mr. Darbey has informed me that a fine example was shot at Tackley, near Woodstock, in November last; this I have not seen. On April 7th (since writing the above) I saw two Grey Shrikes near Banbury. They frequented some pollard willows in the vicinity of the Cherwell, but made excursions into the neighbouring market gardens close to the town, where they resorted to the tallest pear-tree in the gardens as a look-out post.—Oliver V. Aplin (Great Bourton, near Banbury, Oxon).

Grey Lag Goose in Nottinghamshire.—The keeper at Papplewick Hall shot one of these geese on the pond near the house on the 16th February last. It was by itself and in good condition. The Grey Lag is now a rare bird,—at any rate in these parts,—and though sometimes a few may be seen passing over, they are very seldom shot. Mr. Walter has kindly given me the bird. I need hardly say that, as a Nottinghamshire specimen, it is a great prize.—J. Whitaker (Rainworth Lodge, Notts).

Netting Wood Pigeons in the Pyrenees.—There is a special phase of local sport, if it can be so termed, to be seen within some twenty miles of Biarritz, in the commune of Sare, in the shape of *Palombières* or Wild-Pigeon netting stations, where the birds are caught during their autumnal flight. Never having seen anything of this kind, I and a companion arranged to pay a visit to the nearest of these stations, and one morning started in a pony trap for that purpose. Ascending the hill beyond the Biarritz railway, we beheld a splendid panorama of the valleys of the "pays Basque," backed by the chain of Pyrenees, with the "Trois Couronnes" and the Rhune towering high above their smaller brethren. It is somewhere behind the Rhune that the point we were bound for is situated. After passing the small hamlet of Arcangues there is a choice of two roads, both of which lead to the little market town of St. Pée. We chose the road to the right, hoping, as it is the less frequented and passes for the greater part of its length through a dense forest of oaks, to chance on a Pigeon or two or something worth shooting. We did see one lot of Pigeons, but much too far off; also, in the distance, a large flock of Peewits making their way from the coast towards the meadows, where they proposed spending the night. Beyond these and one Jay we saw nothing during the full hour of our passing through the forest. The road was infamously bad, and we had to walk up several hills to ease the pony, so our progress was but slow. However, there is an end to even twelve miles of bad hilly road, and at six o'clock we drove up to the Hotel de la Nivelle at St. Pée, the hostelry we had decided on to patronize for the night, as being, according to information we had received, but an easy walk from the *palombière*. The result of a conversation, however, was that the *palombière* was a long way from St. Pée, but close to Sare, a village nearly five miles off, to which we could drive early next morning, and that the landlord could find us a first-rate reliable guide. Three-quarters of an hour brought us to Sare, where we stopped at the door of a large old farm house, and were received by a fat, jolly-looking Basque woman, who assured us that she could put us up well, and that as for a guide, her own husband should attend us at any hour in the morning, but that it was a good two hours' walk to the *palombière*. How pleased we were that we had come on to Sare instead of sleeping at St. Pée! At about half-past six next morning, in answer to a shout from the chief, some dozen or fifteen boys emerged from the house and its vicinity, each armed with a big white flag on a pole about five feet long; having received some instructions, they disappeared in different directions in the woods. After an interval of a few minutes the chief summoned his men and we all proceeded to the scene of action, it being now grey dawn. After ascending about one hundred yards from the house, we found ourselves on the ridge of a spur of the Pyrenees, running east and west, and about two thousand feet above the level of the sea. I will now endeavour to describe the general arrangements, premising that I am standing on the top of the ridge and facing to the north. In front and below are spread the valleys of the Nivelle, Nive, and Adour, with several villages dimly visible in the uncertain light. On the right and left fronts are chains of comparatively low hills, which converge towards where we stand; on the left, about a mile off, is the Rhune, 2953 ft. above the sea; while behind is a deep, thickly-wooded valley towards Spain. The ridge is more or less level for some two hundred and fifty yards, which space has been cleared of all wood with the exception of six huge oaks standing in line, but rises abruptly from the level to the eastward. At the height of about 40 ft. in each oak was fixed a spar from which depended a rope, with the lower end pegged to the ground and carrying a wooden travelling ring weighted with iron. Each spar also had a block and halyards, the standing part of the latter being fast to the wooden ring. The nets, 1¾ in. mesh and about fifty feet broad, have their upper corners hooked on to two of the wooden rings, and are thus hoisted into position; the lower ends are drawn backwards, *i.e.* southwards, for about thirty feet and pegged down; the two halyards of each net are hooked to a single trigger, and all is then ready. The above preparations having been completed to the chief's satisfaction, he pointed out to us the spots where the flag boys were posted to the distance of nearly a mile on either side along the converging hills, and then proceeded to ascend to his post in a very tall beach on the rising ground to the right, and about fifty yards to the northward. Just below the ridge to the south, and almost in line with the nets, were some small huts only high enough to creep into, covered with bracken and intended for hiding places. While we stood about chatting and waiting for the Pigeons, we were warned that we must only shoot at such Pigeons as turned back from the net, and to the westward, the latter caution being given in the interest of the chief in the tree. At a quarter-past seven we began to hear the cries of the flagboys in the distance announcing that the first of the birds were in sight, and the fears we had entertained of a possibly blank day were dispelled. In a couple of minutes a shrill whistle from the chief was the signal for everyone to rush into hiding. A few seconds of breathless suspense, and the silence was broken by a roar such as I have only heard equalled by a chorus of howling monkeys in the depths of a Paraguayan forest. Before we could realize what was the matter, there was a rushing sound overhead and a simultaneous collapse of the four nets (one was out of order) with seventeen grand bluerocks fluttering on the ground underneath them. I admit that it was not perhaps sport, but it certainly was most exciting. The net men rushed out and retrieved them. Each bird as it was gathered was plucked of the feathers of one wing, and put into the front pocket of a sort of apron the net men wore, and eventually transferred to a receptacle formed of boughs built round the trunk of a tree. As soon as the last bird was gathered the nets were smartly hoisted again, as the shouts of the flagboys were already heard. In a few minutes, another whistle and another rushing of wings, but, instead of the rattle of the falling nets, there ensued a perfect hurricane of the most awful Basque oaths from the nest in the beech tree, proclaiming to the initiated that the Pigeons had passed over the nets and gone on their way untouched. And so the game went on, with varying success, until at half-past eight six dozen and a half of birds had been netted, and we were obliged to leave. We found that shooting was impossible without interfering with the legitimate business, and only fired one shot, scoring a miss. The Pigeons were first sighted by the extended flagboys, who, by waving their flags, confine the birds to the valley, and force them in the direction of the nets. As they approach. the chief shows himself in his nest, utters the roar I have mentioned, and throws out a wooden disk about six inches in diameter; this the Pigeons take for a Hawk, and, swooping to avoid it, plunge into the nets. One of the lessees of the establishment, M. Goyeche, was on the ground on the morning of our visit, and gave us the following particulars. The right to net Pigeons on this ridge is rented from the Commune of Sare by twelve partners. Each partner provides a flagboy, who is paid forty francs for the forty days. The passage is supposed to last, say, from Michaelmas to Martinmas Day. These boys have to obey the chief, and each has to carry home his master's share of Pigeons at the end of the day. There are five net men and the chief, among whom and the twelve partners the day's catch is equally divided. The net men receive no pay. M. Goyèche said "We spend a little money on the sport, but we amuse ourselves, and we have the Pigeons to eat all the year round. The average catch is about two hundred and thirty dozen, though three hundred and sixty dozen has been reached. On one occasion one hundred and twenty-four birds were taken in a single net at one flight, each of the other four nets taking a few. There are about ten of these *palombières* to the eastward as far as Luchon, and one to the westward, about a mile, at Echalar; in the latter case the nets are in Spain, while the chief and the flagboys are on French ground, and pay, therefore, to the nets we visited a tribute of two dozen Pigeons yearly. There is no other spot in the Commune of Sare adapted for placing nets, though several have been tried, the desideratum being a level ridge with a rising ground to the east.—*The Field.*

Scarcity of Greenfinches in Cumberland.—I have read with interest Mr. Gurney's note on the abundance of the Greenfinch during the past winter in the South and East of England. It is correlative to a scarcity of the species in the North—at all events in North Cumberland. I do not think I have seen half a dozen this winter, and my friend Mr. Senhouse considers that this species entirely withdraws from his district before winter. The number netted by London birdcatchers in autumn, when most birds are on flight, often far exceeds the demand, and I have seen the dealers thankful to sell them retail at a penny each.—H. A. MACPHERSON (Carlisle).

Suggestions for Egg Collectors.—As the season is approaching when the egg collector will be once more able to add to his collection, I would like to call attention to a method of egg-blowing that I happened to hit on in 1882, and which I used with perfect success last year. Anyone who has been in the habit of blowing eggs in the usual way, either with the lips direct or through the medium of the blowpipe, will know the great difficulty there is in regulating the force with which one blows. This is especially the case in eggs in which incubation has just commenced: directly you begin to blow the albumen of the egg generally begins to flow pretty freely. Encouraged by the result you keep on blowing, but suddenly either the yelk-sac or the thickened yelk itself stops the flow of the contents, and bang goes your egg-shell. I know the number of accidents that occur to *expert* egg-blowers is small, but that they do occur occasionally I think even the past masters of the art will admit. Now, to remedy this I use a glass tube with one end drawn to a point and the other connected with a small india-rubber ball (I always use the instrument supplied with a stylographic den for refilling). If the point be inserted into the egg to be blown, after the hole has been drilled, and the ball gently pressed with the finger and thumb, the contents of the egg will begin to be evacuated; the air-pressure can be regulated to the greatest nicety with very little practice. Sometimes it seems to answer better to reverse the action of the instrument by expelling the air from the bulb and then inserting the pointed end; on the pressure being removed the egg-contents are either drawn up into the tube or if there seems to be anything stopping their being sucked up, if the tube be cautiously withdrawn, the cause of the obstruction may be drawn to the hole in the egg, still being held to the point of the instrument by the suction, and may then be caught by the forceps and dealt with in the usual way. After the contents of the egg have been evacuated, the instrument can be used as a syringe to thoroughly wash out the interior. Should any of the readers of 'The Zoologist' employ this method of egg-blowing, I should be very pleased to hear of its success in their hands. — HERBERT LANGTON (115, Queen's Road, Brighton).

A New Heronry in Suffolk. — Early last year a party of Herons were seen frequenting Lord Waveney's estate at Flixton. Care was taken not to disturb them, and they took up nesting-quarters in a grove of large oaks near the Hall. Six nests were built here, and one more in a neighbouring wood. In the same grove there has been for many years a large rookery. For some time after the Herons appeared quarrels took place, and the new-comers were seen chased by the Rooks, but the differences seem eventually to have been settled. This year there are at present (March 20th) three Herons' nests in the oak grove, while the Rooks' nests in the vicinity of the Herons' trees are untenanted. The keeper tells me that, until last year, no Herons had reared young at Flixton; but as they will be sure of protection there, and the River Waveney, within two miles, will give them a good food supply, it is to be hoped they will permanently establish themselves in the park, and another name will be added to the list of Suffolk heronries.— C. CANDLER (Harleston, Norfolk).

Late Stay in Autumn of the Green Sandpiper. — The Green Sandpiper, which was much more common than usual in North Oxon during the past autumn, made a rather late stay with us. On November 8th I watched a party of five on the mud at Clattercutt Reservoir; and on the 19th a female example was picked up under the telegraph-wires at Somerton, and came into my possession the next day. The stomach of this bird only contained a few wing-cases and other remains of minute beetles; it was, however, in very good condition, the musky odour not particularly strong. On the 22nd I saw another bird at the Reservoir; and lastly, Mr. W. W. Fowler wrote me word that he had seen two in the Evenlode, near Kingham, on December 24th.—Oliver V. Aplin (Great Bourton, near Banbury).

Note on the Snow Bunting. — Mr. Henry Williams, principal lightkeeper on Aranmore Island, off N.W. Donegal, has sent me two Snow Buntings in plumage which are worth noting. They were shot in the first week in May, 1883, and are almost in full summer attire. I forwarded the most advanced specimen to Prof. Newton, and he observes that the bill is not absolutely black; and that some feathers on the rump have not shed their fringes, and that therefore it cannot be said to be in *full* summer attire; but he adds, "I am sure I have seen Snow Buntings breeding in a far less advanced condition." Mr. Williams is well acquainted with the species in its ordinary winter dress, but did not recognise these as Snow Buntings at all; and entered them in his schedule as "Lapland Buntings," adding that the oldest person on Aranmore had never seen the species before. At the time I was not aware the skins had been preserved; and the Lapland Bunting not being known as an Irish species, Mr. More and I added a note to the effect that it was probably some state of plumage of the Snow Bunting (see 'Report on Migration of Birds,' 1883, p. 101). On April 27th, 1883, another Snow Bunting shot, but Mr. Williams observes that it was "one of the common birds" which remained on the island during the winter. The so-called "Lapland Buntings" arrived after these had departed. The first week in May is the latest date recorded in Ireland for this species, and it is early for the summer plumage to be so far advanced (but see Newton's 'Yarrell,' vol. ii., p. 12, footnote). Prof. Newton remarks in his letter to me that if the birds have been "wintering well," the summer plumage is likely to appear early. This is entirely borne out by the condition of the best specimen from Aranmore—a large quantity of fat still adheres to the skin, and our best taxidermist states that it will be impossible to mount it for this reason. Mr. Williams has entered a Snow Bunting on August 18th, 1883, which he states was in winter plumage, and appeared wounded.—Richard M. Barrington (Fassaroe, Bray, Co. Wicklow).

The Glaucous Gull in Skye. — When rowing across Dunvegan Loch, on April 10th, I was pleased to detect a single example of *Larus glaucus* in a mob of *L. argentatus* gathered round the 'Assistance.' I attempted to stalk it in shore on the 11th, but unsuccessfully, though my keeper shot it later in the day. To the naked eye it appeared to be altogether of a creamy white, but my glasses showed clearly the mottled wing-coverts. Judging from Saxby's observations, the date is a late one; but the weather had been cold, and the wind easterly. I may add that the iris of this bird, which I believe to be approaching adult plumage (*i. e.*, in the following winter), was dark brown. The legs and toes were flesh-coloured, but much whiter than those of an example of *L. argentatus* which I shot for comparison. The claws of *L. glaucus* are much stronger than those of *L. argentatus*. My friend Capt. Macdonald has shot examples of *Larus glaucus* in Skye, but only in mid-winter; and I fancy it is only a straggler to Skye from the Outer Hebrides.—H. A. MACPHERSON (Carlisle).

The estimated Speed of American Wildfowl.— In his instructive book entitled 'Fifty Years with the Gun and Rod,' Mr. D. W. Cross estimates the speed of various species of wildfowl as follows:—Mallard, from 45 to 50 miles an hour; Black Duck, from 45 to 50 miles an hour; Pintail, from 50 to 60 miles; Wood Duck, from 55 to 60 miles an hour; Widgeon, 65 to 70 miles an hour; Gadwall, 60 to 70 miles an hour; Redhead, 80 to 90 miles an hour; Wild Geese, 80 to 90 miles an hour; Bluewing Teal, 80 to 100 miles an hour; Broadbill, 85 to 110 miles an hour; Canvass-back, 85 to 120 miles an hour. Allowing an initial velocity of 1800 to 2000 feet per second for small shot, the sportsman can by a slight mathematical calculation learn the proper distance to "hold ahead" in shooting at ducks on the wing.

FISHES.

Early Arrival of Mullet on the Coast of Cornwall.— On March 28th I received from Prussia Cove, Mount's Bay, two Red Mullet, *M. surmuletus*, taken in a trammel on 26th inst. I have recorded much larger specimens; but these are very early arrivals, and of a size which at this time of the year deserve record. The larger one weighed one pound eight ounces, and measured over all one foot two inches. The lesser one weighed one pound six ounces, and measured over all—the same as the larger—one foot two inches.—THOMAS CORNISH (Penzance).

CRUSTACEA.

Loss of Limbs in Stalk-eyed Crustacea. — Mr. E. Lovett's notes on the habits, &c., of the Lobster have been read with much interest; but being somewhat sceptical as to some of the alleged facts related in the March number of 'The Zoologist' (p. 103) as to Lobsters "shooting" their claws through fear, I sought information from an old and well-known fisherman, who has probably caught as many Lobsters and Crabs as any man living, having done nothing else for sixty years. On being questioned as to the stated fact of the Lobster parting with its claws through fear, he said he had never known an instance, nor had he ever heard of one, though Lobsters occasionally, in struggling to escape when laid hold of at the mouth of the pot, leave a claw in the fisherman's hand. Crabs sometimes lose a claw when endeavouring to force their way among the rocks. As to the healing of injured limbs, my informant says that both the Lobster and

Crab die—"bleed to death"—if the claws are broken or the leg disjointed, except near the body, *i.e.*, at the first joint from it. He was amused at the idea of thunder causing the Lobster to lose its claws, or noises of any kind! Moreover, we have yet to learn that in the tropics, where thunderstorms are more frequent than in this country, the Stalk-eyed Crustacea are more often found clawless!—H. W. HADFIELD (High Cliff, Ventnor).

INSECTS.

Injurious Insects.—Miss E. A. Ormerod's 'Report of Observations of Injurious Insects and Common Farm Pests during the Year 1884' embodies the remarks of numerous observers in the United Kingdom on insects injurious to farm and garden crops, and the extent of their depredations, with suggestions for prevention and remedy. The plan of the Report is alphabetical, arranged according to the name of the plant attacked, as, for instance, the apple, beans, birds (with especial reference to the depredations of sparrows), cabbage, carrot, &c. In the matter of sparrows, Miss Ormerod says: "The injury continues to be widespread and serious, not only with regard to corn, but likewise fruit-farming districts and garden crops." Her numerous correspondents all agree that sparrows will not feed on insects when seeds, grain, fruit, and other vegetable food is within reach, and that, consequently, their numbers must be kept down if any farm or garden crops are to be harvested. Miss Ormerod is careful to point out that in advocating a judicious destruction of the House Sparrow, other small birds are not included. The Report is published by Messrs. Simpkin, Marshall & Co.

ARCHÆOLOGY.

A shoal of Porpoises in the Thames.—In the 'Gentleman's Magazine and Historical Chronicle' for 1747 (vol. xvii), it is recorded that on Monday, the 20th July of that year, "Above 20 large porpusses came up with the tide almost to London Bridge, and after continuing near an hour playing on the water return'd in a body."—OLIVER V. APLIN (Great Bourton, near Banbury).

SCIENTIFIC SOCIETIES.

ZOOLOGICAL SOCIETY OF LONDON.

March 17, 1885.—Prof. W. H. FLOWER, LL.D., F.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of February, and called attention to Viverrine Phalanger, *Phalangista viverrina*, from Australia, new to the collection; to an Isabelline Lynx, *Felis isabellina*, received in exchange from the Zoological Gardens, Calcutta; and to two Brown Pelicans, *Pelecanus fuscus*, as being of special interest. Attention was also drawn to a fine living example of a Bird-Spider, *Mygale fasciata*, from Burmah, presented to the Society by Mr. H. R. P. Carter.

Mr. Sclater exhibited and made remarks on a Duck shot on Lord Bolton's estate in Yorkshire, which appeared to be a singular variety of the Scaup, *Fuligula marila*.

Mr. W. B. Tegetmeier exhibited and made remarks on a pair of abnormal Deer's antlers obtained in India.

Prof. F. Jeffrey Bell exhibited some living and dead specimens of two species of phytophagous Coleoptera from Bombay, to show the remarkable loss of colour that takes place after death.

Dr. F. H. H. Guillemard read a paper on the Ornithology of the Sulu Archipelago, showing that the *ornis* of that group is purely Philippine, and that the line of separation between the latter Archipelago and Borneo lies between the islands of Sibitu and Tawi-tawi. Dr. Guillemard added fifty species to the list of birds hitherto known from Sulu, two of which were new to Science.

A communication was read from Mr. T. Kirsch, of the Royal Zoological Museum, Dresden, containing descriptions of some new Butterflies obtained by the collectors of Mr. Riedel in Timor-Laut.

A communication was read from Prof. W. Nation, containing some notes on the Peruvian Cliff-Swallow, *Petrochelidon ruficollis*.

A communication was read from the Rev. H. S. Gorham, containing a revision of the phytophagous Coleoptera of the Japanese Fauna, of the subfamilies *Cassidinæ* and *Hispinæ*.

A communication was read from Lieut.-Col. C. Swinhoe, being the second of his series of papers on the Lepidoptera of Bombay and the Deccan. The present paper treated of the first portion of the Heterocera.

Dr. Hans Gadow gave an account of the anatomical differences observed during an examination of examples of the three species of Rhea, *R. americana*, *macrorhyncha*, and *Darwini*.—P. L. Sclater, *Secretary*.

Entomological Society of London.

March 4, 1885.—R. M'Lachlan, Esq., F.R.S., &c., President, in the chair.

William E. Poole, Esq. (11, Chandos Street, Cavendish Square, W.), Richard South, Esq. (12, Abbey Gardens, St. John's Wood, N.W.), Robert Wylie Lloyd, Esq. (32, Grafton Square, Clapham Common), and Arthur Bliss, Esq. (Pennenis, Allenby Road, Forest Hill), were balloted for and elected Members of the Society.

Mr. G. H. Verrall alluded to the probable use that might be made of micro-photography in illustrating the neuration of transparent winged insects; and exhibited many prints and negatives illustrating the wings of *Scatopse*, *Tipula*, and other Diptera.

Mr. T. R. Billups exhibited specimens of *Ceraleptus lividus*, Stein., captured at Chobham on the 23rd February last.

Rev. W. W. Fowler exhibited the unique specimen of *Cerylon atratulum* from Hungary, which had been lent to him by Herr Reitter; also specimens of an Indian *Cassida*, which had been soaked in a preparation to preserve their brightness of colour.

Dr. Sharp said the last exhibit raised the curious question, On what does the colouring matter of the *Cassida* depend? The application of glycerine under the wing-cases of certain Coleoptera maintained the bright colour for a short time, and moisture probably had something to do with colour, as he had often revived lost colours by soaking specimens in water for a day or two.

Mr. Fowler also exhibited a microscopic movable stage of ingenious construction and efficient application, made by Messrs. Smith and Beck.

Mr. W. F. Kirby exhibited, on behalf of Mr. Waterhouse, a beautiful variety of *Spilosoma lubricipeda*, Esp., recently captured by a policeman in the British Museum (Natural History), South Kensington.

The Secretary then read a paper, by Mr. A. G. Butler, entitled "A few Observations touching Mr. De Nicéville's recent Suggestions on Seasonal Dimorphism in the Lepidoptera."

Rev. T. A. Marshall contributed Part I. of a "Monograph of British Braconidæ."

Rev. W. W. Fowler read "Descriptions of new species of *Languriidæ*."

Mr. R. M'Lachlan read a note "On the discovery of a species of the Neuropterous family *Nemopteridæ* in South America, including general considerations regarding the family."

April 1, 1885.—R. M'Lachlan, Esq., F.R.S., &c., President, in the chair.

Hastings Charles Dent, Esq., F.L.S., C.E., &c. (20, Thurloe Square, S.W.), and Ernest Sabel, Esq., F.R.G.S., F.Z.S., &c. (6, Grove Road, Clapham Park, S.W.), were balloted for and elected Members of the Society.

Mr. T. R. Billups exhibited specimens of *Pezomachus immaturus*, Först., and *P. vulnerans*, Först., species new to Britain, captured at Headley Lane on January 3rd last.

Mr. E. A. Fitch exhibited a large moth, belonging to Mr. W. H. Harwood, which was captured by Dr. Wallace on the wall of his garden at Colchester, in October, 1883. It apparently was one of the *Chilonidæ*, and a new species coming nearest to *Erupa* (?) *titanalis*, Felder and Rogenhofer, Reise d. Nov., pl. cxxxvii, fig. 4.

Mr. R. M. Christy, who was present as a visitor, read the following note:—

"As requested by my friend Mr. Wm. Cole, I wish to bring under your notice what I think will be regarded as a remarkably obvious case of naturally protective colouring. I was in America in the autumn of 1883, and on the 26th August, near Carberry, Manitoba, I found a large larva feeding ravenously on the leaves of a small bush (*Eleagnus argentea*), which is common on many of the drier parts of the prairies of the Canadian North-West. A short search brought to light quite a number of others, all feeding on the leaves of the same bush. These I carefully kept, and in due time they entered upon the pupa stage, enclosing themselves in hard brown pear-shaped cocoons open at one end. Unfortunately, however, the mature insects emerged last spring (1884), while I was again away in America, with the result that I am now only able to exhibit two very dilapidated—instead of two very handsome—specimens of that local form or subspecies of *Platysamia columbia* which is peculiar to the prairies of the Canadian North-West, and which has very recently been named *Platysamia columbia uokomia* by my friend Mr. Brodie, of Toronto, in accordance with the trinomial system of nomenclature so general across the Atlantic.

"I have brought up for exhibition specimens of *Eleagnus argentea*. It will be observed that the leaves are of a very peculiar pale silvery green colour, quite unlike that of the leaves of most other shrubs. I have also brought for exhibition a coloured drawing of the full-grown larva of the insect, made by my friend Mr. E. E. T. Seton, of Toronto. It is observable that the colour of the larva exactly corresponds during life with that of the leaves of the food-plant; and, as these themselves are of an unusual colour, I think it may be regarded as an obvious case of naturally protective colouring." A description of the larva followed.

Mr. Christy also exhibited a twig of *Betula glandulosa*, and made the following remarks thereon:—

"On the 7th August, 1883, as I was crossing a very extensive swamp, covered with trees of spruce and tamarac, and lying on the banks of Pine Creek, Manitoba, I observed a butterfly, either belonging to, or closely allied to, *Papilio asterias*, fluttering over the bushes, evidently in search of flowers. As I watched it, it settled momentarily, and exactly as if it had mistaken it for a yellow flower, on a twig of *Betula glandulosa*, Mich., bearing withered leaves of a light yellow colour. This identical twig I now exhibit. There were other similar twigs on the same bush. Of course I am perfectly well aware that it is impossible to say for certain that the insect mistook the leaves for a yellow flower; but it certainly settled upon them in such a manner as to leave little doubt on my own mind that they did so."

Mr. J. W. Dunning called attention to a "Note on a peculiar sense-organ in *Scutigera coleoptrata*," one of the Myriapoda, by Mr. F. G. Heathcote (Proc. Camb. Phil. Soc., v. 219). The organ is situated on the ventral surface of the head at a short distance from the mouth, near the base of the mandibles; and the author believes it to be homologous with the tympanic organ of insects, and to belong to the class of organs usually described as auditory.—E. A. Fitch, *Hon. Sec.*

NOTICES OF NEW BOOKS.

Catalogue of the Lizards in the British Museum (Natural History). Second Edition. By G. A. Boulenger. Vol. I. 8vo, pp. 436, with 32 Plates. Printed by order of the Trustees. 1885.

The first edition of the Catalogue of Lizards in the National Collection was prepared by Dr. J. E. Gray so long ago as 1845. At that date the number of specimens in the Museum did not exceed one-eighth of their present number; consequently a new edition has been for some time a desideratum, not only as a guide to the collection, but as a much-needed text-book for students. For it should be remembered that, although nominally a catalogue, it is not a mere list of names, but contains the synonymy with detailed descriptions and measurements of every species included in it, an indication of the habitat of each, and the localities where the Museum specimens have been obtained. As upon a moderate estimate the order *Lacertilia* comprises some 1700 species varying considerably in form and structure, the preparation of such a catalogue is evidently no slight undertaking. In the volume before us we have the first of three instalments, extending to 436 pages, with 32 plates, upon which 112 species are figured either entire or in part.

To understand the classification adopted by Mr. Boulenger, the reader should refer to his "Synopsis of the Families of Existing *Lacertilia*," published in the 'Annals and Magazine of Natural History' for August, 1884. Here it will be seen that Mr. Boulenger considers the classifications proposed by Dumeril and Bibron, and Gray (which with slight modifications are still generally in use) to be as unnatural as can be; for he believes physiognomy to be useless as a guide in the formation of higher groups, and the characters afforded by the scales deceptive and unreliable, unless considered in relation with other characters. He prefers, like Prof. Cope, to lay more stress on osteological characters, and on the structure of the tongue. He attaches special importance also to the presence or absence, and the structure of dermal ossifications on the head and body, which are found to correspond with many other characters.

He divides the order *Lacertilia*, then, into two primary groups, the Chameleons on the one hand, and all the other Lizards on the other. The Amphisbænians, which by nearly all recent authors are separated as a suborder, or even as an order, he includes among the true Lizards, and regards them as a degraded type of the *Teiidæ*, with which they are to some extent connected by the *Chalcides* and their allies.

Leaving the Chameleons to be dealt with last, he commences with the true Lizards (*Lacertilia Vera*), which suborder he divides into twenty families, regarded as perfectly natural groups. Of these twenty families the volume before us deals with five only, the greater portion of this instalment being occupied with the Geckos and their allies, which are represented in all the warmer parts of the globe, but are most numerous in the Indian and Australian regions.

The habits of the Geckos, says Mr. Boulenger, are highly interesting, and deserve special attention, since few observations have been made on them. Some inhabit arid regions, sometimes burrowing in the sand; others are arboreal, living on shrubs or in woods, concealing themselves under stones or under the bark of trees during the daytime; others live on rocks; others have become the commensals of man, and they again may be divided into two groups—those living inside, those living outside houses. Most are nocturnal, but some are diurnal. Col. Tytler, in a very interesting paper on the habits of Geckos, observes that, "Although several species of Geckos may inhabit the same locality, yet, as a general rule, they keep separate and aloof from each other; for instance, in a house the dark cellars may be the resort of one species, the roof of another, and crevices in the walls may be exclusively occupied by a third species. However, at night they issue forth in quest of insects, and may be found mixed up together in the same spot; but on the slightest disturbance, or when they have done feeding, they return hurriedly to their particular hiding-places."

Many Geckos utter sounds, probably produced chiefly by a movement of the tongue against the palate, and in which "yecko," "chucko," "tockee," or something similar, is distinctly audible. Sir Andrew Smith says that a South African Sand-Gecko (*Ptenopus garrulus*) utters during the day a sharp sound somewhat like "chick, chick"; and he adds that the number thus occupied is at times so great, and the noise so disagreeable, as to cause the traveller to change his quarters.

The plates with which this volume is illustrated have been carefully drawn by Messrs. Mintern and Smit, under the supervision of Dr. Günther, from whose preface we learn that this Catalogue may be expected to be completed in the course of next year, the manuscript of the second volume being far advanced.

Recollections of Fly Fishing for Salmon, Trout, and Grayling, with Notes on their Haunts, Habits, and History. By Edward Hamilton, M.D., F.L.S. Post 8vo, pp. 190. London: Sampson Low, Marston & Co.

Few persons enjoy better opportunities of studying Natural History than fishermen. The natural retirement of the haunts they prefer, the quietude which attends their avocation, the stealthiness, so to say, of their movements, all tend to facilitate the uninterrupted observation of Nature in her workings, and heighten the enjoyment of a day's sport. The beautiful and romantic scenery also through which many trout and salmon rivers flow increases the charm and delight of fishing them.

It seems therefore quite natural that one who has been a fisherman all his life, and attentive to Nature's teaching, should sit down to place on record some of the many lessons he has learnt while following his favourite pursuit.

In Dr. Hamilton's lately published 'Recollections of Fly Fishing' we have a very agreeable book of this kind, and although many such volumes have appeared, it cannot be said that this is a superfluous addition to the literature of Fishing. On the contrary, it strikes us that there is much that is fresh and original in his book, and if the subjects discussed therein are not always new, the facts bearing upon them which have been collected by the author in many places seem to throw a new light upon the questions at issue.

Four of the chapters deal with the Natural History of the Salmon, Trout, Sea Trout, and Grayling; the remaining chapters contain directions when, where, and how to fish for all these in turns, with many entertaining reminiscences of good and bad days' sport enjoyed by the author, and an attempted explanation of the causes which he supposed contributed to his success or the want of it.

At p. 168 Dr. Hamilton discusses the subject of variation in the colour of Trout, and how produced:—"Some with dark backs, silver sides, and black spots: others, splendid fellows, with yellow sides, and red spots predominating."

It has been noted, he says (p. 169), that in the swift-running streams over gravelly beds the fish for the most part have red spots and yellow flesh—perhaps owing to the greater exposure to light; in the deeper rivers and more sluggish streams Trout are more black-spotted.

After examining the opinions of previous writers on this subject, Dr. Hamilton concludes (p. 173):—"Taking all the various causes for change of colour in the Common Trout, I can only come to the conclusion that there is only one species of the *Salmo fario* in Great Britain, and that the so-called species of Couch and other authors are only varieties of this fish."

The Grayling appears to have received its name *thymallus* from the odour of the fish when first taken out of the water. "Some people," says our author, "are unable to distinguish this peculiar smell, but it is unmistakable. I have caught hundreds of Grayling, and have never found it absent in any fish over half a pound. But it is more like the smell of cucumber than thyme much the same as that which emanates from the Smelt."

Three peculiarities of this fish strike the observer at once—the triangular pupil of the eye, the large beautiful violet-coloured spotted dorsal fin, and the two longitudinal orange-coloured stripes extending from each pectoral fin. The name Grayling is said to be a corruption of "gray lines," from the longitudinal lines along the body. It is called "Oumer" in Northumberland, and the smaller fish prior to breeding are known on the Teme as "Shutts" or "Spots." Salviani says the name *Umbra* is derived from the fish being a very swift swimmer; it disappears like a shadow—

> "The smooth-scaled *Umbra* as it passes by,
> Flits as a shadow o'er the gazer's eye."

With an account of this fish the book closes; but we must not omit to notice the capital mezzotint of a Salmon-pool, engraved by Mr. Seymour Haden as a frontispiece to the volume, nor the many pretty woodcuts from sketches made by the author during some of his fishing expeditions.

A Highland Gathering. By E. LENNOX PEEL. With illustrations by CHARLES WHYMPER. Post 8vo, pp. 185. Longmans, Green & Co. 1885.

DESPITE the Shakespearian dictum, "What's in a name?" experience tells us that in selecting a title for a book a great deal may depend upon the name which is bestowed. Mr. Lennox Peel's title is not a happy one, for it conveys to the reader's mind no adequate idea of the nature of the contents. Before opening it we supposed it to be a novel, in which we expected to find a more or less dramatic description of "the gathering of the clans," with descriptions of Scottish life and scenery. We have been agreeably surprised to find that it is nothing of the kind, but embodies some of the highland experiences of an enthusiastic sportsman, in whose narrative incidents of sport and Natural History are pleasantly mingled.

Deer-stalking, salmon-fishing, ptarmigan-shooting, and other kindred occupations which tend to make life pass so agreeably in the Highlands are all described in turn, and the reader is often reminded, by the truthfulness of the descriptions, of similar turns of good or ill fortune within his own experience.

Some thirty illustrations from the facile pencil of Mr. Charles Whymper, many of them capitally drawn, appeal almost as much to the sympathies of the naturalist as to those of the sportsman. Deer crossing a hill, "black and gaunt against the drifted snow" (p. 177), and Ptarmigan on the wing (p. 180) may be especially noted as sketches in which the artist has happily caught the true expression of motion in these "children of the mist."

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